County of Los Angeles
CHIEF EXECUTIVE OFFICE
Kenneth Hahn Hall of Administration
500 West Temple Street, Room 713, Los Angeles, California 90012
(213) 974-1101
http://ceo.lacounty.gov

WILLIAM T FUJIOKA
Chief Executive Officer

May 6, 2009

To: Supervisor Don Knabe, Chairman
Supervisor Gloria Molina
Supervisor Mark Ridley-Thomas
Supervisor Zev Yaroslavsky
Supervisor Michael D. Antonovich

From: William T Fujioka
Chief Executive Officer

RENEWABLE ENERGY PROGRAM: RESPONSE TO JANUARY 13, 2009, BOARD DIRECTION

On January 13, 2009, on motion of Supervisor Knabe, as amended by Supervisors Ridley-Thomas and Yaroslavsky, your Board directed the Chief Executive Office (CEO), with support from Internal Services Department (ISD) and the Department of Public Works (DPW), to create an action plan for developing a Comprehensive Renewable Energy Program.

The Board action requested a report back on a number of energy and environmental issues, including constituent initiatives, renewable energy sources, current energy usage and cost data, legislative recommendations, the role of the County's Energy and Environmental Team, and related topics. The complete Board action is provided as Attachment I.

On February 20, 2009, we submitted an initial response to your Board (Attachment II). In that document, we indicated that the remainder of the Board action would be addressed by April 2009.

Attachment III provides a comprehensive report to address each item that was included in the January 13, 2009, Board action.

Due to the length of the attachment, this memo summarizes our general response to the Board action. For brevity and clarity, we have re-categorized the Board's requests above into three general questions:

1. What is the County doing to implement a constituent program for energy and environmental services?

2. How can the County best implement a renewable energy program for both internal operations and for constituents?

3. Given the magnitude and scope of developing an overall County Climate Change program, how can the County deploy its resources to effectively evaluate and implement greenhouse gas reduction goals and measures for achieving those goals?

The remainder of this memo addresses these three issues.

1. What is the County doing to implement a constituent program for energy and environmental services?

A constituent-focused initiative will be provided through the development of a County Community Energy Services Program. This program will provide technical support and incentives to constituents for implementing energy efficiency measures and renewable energy projects. We will be expanding our LA County green website, http://green.lacounty.gov, to provide energy and environmental services information for constituents. We are also analyzing the cost and feasibility of establishing regional offices to support this program in areas where these programs are needed the most.

Initial funding to develop and implement the Community Energy Services Program can be provided from programs authorized under the Federal American Recovery and Reinvestment Act (ARRA). Under ARRA, the County is expected to receive $15.4 million in Federal Energy Efficiency and Conservation Block Grants. State Energy Program competitive grants are also available to fund these types of programs. It is anticipated that as much as $10 million of the County's $15.4 million Block Grant allocation could be recommended for use on this program.

The key element within this program will be the County's development of an AB 811 municipal financing program, which allows building owners to finance solar power installations through property tax assessments and payments. The financing under this program, by statute, is permitted to cover program operating and administrative costs. This could provide long-term funding beyond the initial Block Grant funding. Further discussion on how this program will be implemented is contained in the detailed report.

ISD has been delegated by the CEO as the coordinator of all ARRA energy-related grants and will include this program in the Block Grant and competitive grant applications. We plan to return to your Board in the Final Changes phase of the fiscal year 2009-10 budget process to seek budgetary approval for this program.

2. **How can the County best implement a renewable energy program for both internal operations and for constituents?**

The County should develop renewable energy projects on existing County facilities and property. The newly created County Solar Map (an internet-based solar potential calculator for all buildings located within the County) indicates that there is tremendous solar power potential on County-owned assets.

Developing solar power and solar water-heating projects on County facilities will provide energy savings and contribute to reducing greenhouse gas production in County operations. It is recommended that renewable energy projects on County facilities be financed using Power Purchase Agreements (PPAs). PPAs are similar to lease-financing arrangements and allow private, renewable energy project developers to pass through significant tax incentives to the County. We are working with County Counsel to see how PPAs could work within the County's legal and financial structure.

A reasonable initial target for renewable power production in the County on existing facilities is to offset 1% of current County energy consumption. This would offset 10 million kilowatt hours (kwh) of electricity use, contribute towards the AB 32 goal of achieving 1990 greenhouse gas reduction levels by 2020, and could be implemented while achieving a positive Net Present Value over the life of the projects. Roughly, this effort would cost $25 million, but under a PPA, the County may be able to implement these projects without providing up front capital. ISD can facilitate these projects under its Energy Projects Master Agreement.

The County should also pursue developing large-scale renewable power projects on appropriate County property or on private property (through a public-private joint venture). Developing larger scale projects provides economies of scale on project costs. Additionally, new legislation (AB 2466) provides greater revenues for this generated power compared to selling the power to utilities or power marketers. AB 2466 allows the County to offset renewable power generated at one location against other County accounts – thus ensuring that excess generated renewable power can fully offset electricity rates on County accounts.

Lastly, the ARRA has funded two Federal Tax Credit Bonds (Clean Renewable Energy Bonds and Qualifying Energy Conservation Bonds) which provide financing incentives for large, municipal renewable energy projects. This Office will work with ISD and Treasurer/Tax Collector to evaluate these opportunities.

More detailed recommendations and analysis are provided in the detailed report.

3. **Given the magnitude and scope of developing an overall County Climate Change program, how can the County deploy its resources to effectively evaluate and implement greenhouse gas reduction goals and measures for achieving those goals?**

The Energy & Environmental Policy Team was created by your Board to bring together representatives from within the County to help develop the Countywide Energy & Environmental Policy and to evaluate and recommend additional policy programs.

The output of the Team's work to date is documented in semi-annual updates that have been provided to your Board, and in the development of the County's Green Website: http://green.lacounty.gov. This website describes the environmental programs and activities undertaken by the County for both internal operations and on behalf of constituents. The development of the website has been a critical, initial role undertaken by the Team, to create a tool which documents and describes all of the County environmental efforts.

The Policy Team has also prepared a draft County Climate Change Program (Attachment IV), which provides a plan for reducing greenhouse gas emissions in County internal operations and for constituents, how to comply with legislative and regulatory policies and requirements, how to promote County programs, and how to fund and administer all activities. However, the Policy Team is, for the most part, a voluntary committee of department representatives willing to develop and propose new programs for the County's Energy & Environmental Policy. The Policy Team does not have the dedicated resources necessary to implement, administer and monitor all of the County programs.

In addition to this renewable energy policy, the Climate Change Program identifies 22 other programs that need this type of assessment, analysis and day-to-day management. As evidenced by the detailed report on developing a renewable energy program for the County, additional dedicated resources are required to manage and implement this effort.

During the Final Changes phase of the FY 2009-10 budget process, we will recommend that your Board approve additional resources to further develop, implement, manage and measure progress of the Climate Change Program.

If you have any questions, or require further information, please contact Ellen Sandt, Deputy Chief Executive Officer, at (213) 974-1186 or esandt@ceo.lacounty.gov.

WTF:EFS:LS:ef

Attachments (4)

c. Assessor
Auditor Controller
Executive Officer, Board of Supervisors
Acting Chief Information Officer
Acting County Counsel
Director, Internal Services Department
Director, Public Works
Acting Director, Regional Planning
Treasurer and Tax Collector

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ATTACHMENT I

JANUARY 13, 2009 BOARD MOTION ON RENEWABLE ENERGY

On motion of Supervisor Knabe, seconded by Supervisor Yaroslavsky, unanimously carried, the Chief Executive Officer (CEO) was directed to take the following actions:

1. Examine the practicality of Los Angeles County offsetting a minimum of 10% up to as much as 100% of our current annual electrical needs through the use of renewable energy with the research to include the viability of the County purchasing renewable energy credits and the use of renewable energy, which shifts the amount of conventional electricity generation required away from fuels like natural gas, coal and oil;

2. Report back to the Board within 90 days on the County's current annual energy usage and costs, along with options for the County to begin purchasing renewable energy;

3. Provide an analysis of how the use of renewable energy or the purchase of energy credits would work in conjunction with the County's existing Energy and Environmental Policy, specifically including:

   - How the costs and benefits of purchasing electricity from renewable energy sources compare to the costs and benefits of investing money in improving the energy efficiency of the County's operations;

   - How the County's Energy and Environmental Team can effectively evaluate and implement on an ongoing basis the most cost effective and efficacious options for reducing the County's contribution to air pollution and greenhouse gas emissions;

   - What the County's Energy and Environmental Team's role is, and what it should be, in ensuring that the Energy and Environmental Policy is consistently implemented by all County Departments; and

   - What centralized mechanism, if any, exists in the County to track, coordinate, implement, monitor, and prioritize the variety of efforts currently underway to enhance the environmental sustainability of the County's operations, including but not limited to increasing our energy efficiency, combating global warming and air pollution, reducing the generation of solid waste, and improving water quality;

4. In coordination with the Intergovernmental Relations Unit, incorporate a solar installation program as well as other appropriate renewable-energy and energy-efficiency proposals as part of our Economic Stimulus funding request;

5. With appropriate Departmental staff, report back to the Board by January 31, 2009 with an action plan for developing a Comprehensive Renewable Energy Program with the action plan to include recommendations on:

   • Timeframes for meeting key benchmarks (including proposal development, program establishment, and implementation); and

   • An outreach plan to incorporate community input from residents, developers, and other interested stakeholders;

6. Report back to the Board with a comprehensive proposal for a Renewable Energy Program no later than April 1, 2009 with the proposal to include, but not be limited to:

   • A cost analysis, feasibility assessment and recommendations regarding constituent-focused initiatives to be included in the Program. The proposal should include an analysis of community choice aggregation, home energy audits, financing of residential renewable energy products, and other initiatives as deemed appropriate;

   • Policy recommendations for renewable projects on County property, including protocols for public-private partnerships, new construction, leased facilities, and existing buildings;

   • Identification and recommendations of existing best practices and opportunities to partner with other local jurisdictions;

   • Benchmarks for the Board to consider adopting regarding conversion to a renewable energy portfolio to meet our electrical needs;

   • Strategy for soliciting Federal Energy Block Grants funds to support a comprehensive Renewable Energy Program; and

   • Additional recommendations for inclusion in our State and Federal legislative agenda; and

7. Identify and coordinate all approved motions relative to improving the health of the environment and the related well being of County residents.

Attachment II

County of Los Angeles
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Kenneth Hahn Hall of Administration
500 West Temple Street, Room 713, Los Angeles, California 90012
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WILLIAM T FUJIOKA
Chief Executive Officer

February 20, 2009

To: Supervisor Don Knabe, Chairman
Supervisor Gloria Molina
Supervisor Mark Ridley-Thomas
Supervisor Zev Yaroslavsky
Supervisor Michael D. Antonovich

From: William T Fujioka
Chief Executive Officer

RENEWABLE ENERGY PROGRAM: INITIAL RESPONSE TO JANUARY 13, 2009 BOARD DIRECTION

On January 13, 2009, on motion of Chairman Knabe, as amended by Supervisors Ridley-Thomas and Yaroslavsky, your Board adopted an integrated series of actions directing the Chief Executive Officer (CEO), working in collaboration with the County's Energy and Environmental Policy Team and all appropriate County departments, to outline an action plan for the development of a Comprehensive Renewable Energy Program. The Board's action also outlined technical, organizational and fiscal analytical steps to be included in the action plan to ensure that all appropriate components are included in the Renewable Energy Program. The action plan was requested by January 31, 2009; the CEO issued a memo February 4, 2009 requesting an extension to February 20, 2009.

The CEO, working with the Energy and Environmental Policy Team, augmented with representatives of the Assessor, Auditor-Controller, County Counsel, and Treasurer-Tax Collector has prepared the attached outline of an action plan for the development of a Comprehensive Renewable Energy Program benefiting both County operations and County constituents (Attachment I). As noted in Attachment I, lead and support departments have been designated for each of the six action element teams, and the initial issues and tasks to be undertaken by each team have been determined. At the present time, each team is conducting scoping meetings to more fully develop the issues and tasks as well as a timeline for development of the team's element of the Renewable Energy Program. Each team is also to identify appropriate outreach strategies to engage community residents, and other interested stakeholders.

As described above, the CEO, with input from the Energy and Environmental Policy Team, will assume the following responsibilities:

- Assess how the Renewable Energy Program, and other energy and environmental programs, may be best organizationally located within the County to ensure maximum involvement by, and inclusion in the daily actions of, all departments;
- Provide direction to and ensure the integration of the work of the teams as appropriate;
- Ensure that the work of the teams includes reliable information analyzing the cost and feasibility of the both County and constituent focused initiatives;
- Consider how the provisions and funding included in the Federal American Recovery and Reinvestment Act may be utilized to advance the County's Renewable Energy Program; and
- Ensure that implementing the Renewable Energy Program for consideration by the Board is coordinated with an integrated energy/environmental legislative strategy for the inclusion of any new action items in the County's State and federal legislative agendas.

The CEO and Internal Services Department, as the Chair of the County Energy & Environmental Policy Team, are also developing a more global Countywide Climate Change Program. This program will incorporate the current efforts of a variety of County programs, including the Renewable Energy Program, and will include future action items that will enable the County to enhance the health of the Los Angeles environment. In keeping with your Board's direction, it is anticipated that the Countywide Climate Change Program will be presented to your Board by April 1, 2009, along with the next status report on the Renewable Energy Program. This proposed program will be consistent in scope with Climate Action Network Best Practices Framework as jointly adopted by the California League of Cities and the California State Association of Counties. The Countywide Climate Change Program will include proposals on how all of the County's energy and environmental efforts will be centrally assessed, developed, implemented and administered.

If you have any questions or require further information, please contact Deputy Chief Executive Officer Ellen Sandt at esandt@ceo.lacounty.gov or 213-974-1186.

WTF:SRH:ES:LS:SW:LR:ef

Attachments

c: Executive Officer, Board of Supervisors
County Counsel
Assessor
Auditor-Controller
Treasurer-Tax Collector
Chief Information Officer
Director, Internal Services Department
Director, Public Works Department
Acting Director, Regional Planning Department

ATTACHMENT III

RESPONSES TO JANUARY 13, 2009 RENEWABLES MOTION AND AMENDMENTS

This document identifies each Board motion from January 13, 2009 (in bold, italics), followed by a discussion of each issue.

1. ***Examine the practicality of Los Angeles County offsetting a minimum of 10% up to as much as 100% of our current annual electrical needs through the use of renewable energy with the research to include the viability of the County purchasing renewable energy credits and the use of renewable energy, which shifts the amount of conventional electricity generation required away from fuels like natural gas, coal and oil.***

The options for the County to begin purchasing renewable energy include the following:

1) Purchase "Green Credits" from Utility Companies
2) Direct Funding and Installation of Renewable Projects on County Facilities
3) Private Financed Power Purchase Agreements
4) Energy Tax Credit Bonds
5) Large Renewable Power Projects on County-Owned or Other Property with Excess Power Credited through the Utility Grid

Purchase "Green Credits" from Utility Companies

The County could purchase renewable energy, or "credits," from the utilities. The utilities provide renewable energy to retail customers which they have purchased from other wholesale power sources. The utilities charge retail customers an approximate 20% premium over their current energy prices in their rates. This program, including documentation of renewable power purchased by the utilities and pricing to retail consumers, is regulated by the California Public Utilities Commission (CPUC). There is no change in utility service or delivery. The advantage of purchasing "credits" is that there is no up front cost or investment in a renewable installation. The disadvantage is that there is no utility savings or cost avoidance (i.e., the economic Net Present Value of a renewable "credits" program will always be negative).

This is one way that companies may show their support for renewable power by agreeing to pay the premium. However, purchasing "green credits" may also be useful when evaluating Leadership in Energy and Environmental Design (LEED) Certification of a new or existing building. LEED credits can be earned by purchasing green "credits" to offset a percentage of the buildings power (35% for new buildings and 25 to 50% for existing buildings) for two years. A 20% premium on 25 to 50% of a building's power results in 5 to 10% increase in the building's utility bills for a period of two years. Under some circumstances this may be an effective way of earning LEED credits towards certification.

For example, the ISD Headquarters building is responsible for an annual electricity bill of about $100,000 per year. The table below indicates how LEED credits might be earned by either installing a renewable power system or purchasing "green credits."

ASSESSMENT OF EARNING LEED RENEWABLE CREDITS ON ISD HEADQUARTERS				
Option	**Upfront Cost**	**Annual Cost**	**Annual Benefit**	**Evaluation Comment**
Buy "green credits" to offset 50% of consumption	$0	$10,000	$0	2 years of purchases required for certification.
Direct installation at Headquarters site (offset 50% consumption)	$750,000	$0	$50,000	Approximate 15 year simple payback for direct installation. Assumes no utility rate escalation or other financial factors.

This example indicates the short term financial benefit of using "green credits" to obtain LEED credits for a building. A more detailed assessment of utilizing renewable in County facilities, including additional assumptions and financial analyses, is described later in this report.

Direct Funding and Installation of Renewable Energy on County Buildings

Solar power installations and solar water heating installations are the most common types of renewable installations for buildings. For the purposes of this analysis, solar water heating is not quantitatively addressed with regard to an overall County Renewable Energy program because of the limited applications. Instead this report addresses solar power installations.

For the purposes of economic analyses, the general performance benchmarks listed below are used. These are the same performance benchmarks that were derived for use on the County Solar Map.

- Cost per solar installation capacity - $6,000 per kilowatt (kW)
- Amount of viable sunlight per day – 5.5 hours
- Solar energy production from a 1 kW installation – 2000 kilowatt-hours (kWh) per kW per year
- Average Peak period electricity cost avoided - $0.15 per kWh
- Typical evaluated life of a solar installation - 20 years

These are typical figures found in residential and small/medium sized commercial applications. Due to economies of scale, the larger the installation, the lower the unit costs. However, for the purposed of providing general guidelines for renewable policy development, these figures are adequate. Many other factors influence the overall economic evaluation of a solar installation. These include: lower installation costs due to market supply and demand, State incentives for installing solar, federal and State tax incentives, and escalation of utility rates over time. Each of these are discussed below.

Financed Installation of Renewable Energy on County Buildings – Power Purchase Agreements

Power Purchase Agreements (PPA) are a popular alternative to direct installation and payment of renewable installations at public agency facilities. Currently, renewable installation owners are provided tax incentives which include significant tax credits and accelerated depreciation. PPAs allow the County to recoup these tax incentives from the developer. Under a PPA the following arrangements exist:

- The project developer owns and maintains the installation, and receives the tax incentives
- The output of the installation is provided directly to the County facility
- The County pays a monthly amount to cover the cost of energy and the installation (which reflects the tax incentives received by the developer)
- The monthly price is negotiable, pricing terms could include:
    - Fixed price over the term
    - Variable pricing based on future electricity prices
    - Escalated payments
    - Options to implement new technologies or shorter terms
    - Guaranteed performance of the installation
- The County may own the installation after the term of the agreement
- Agreement terms are typically 20-30 years
- A lease arrangement would be needed for the structure or space the installation occupies

PPAs have been utilized by many other local governments, the California State University System, the Los Angeles Community College District, and the Los Angeles Unified School District. All of these public agencies have adopted aggressive renewable power policies and they are implementing them through the use of PPAs.

Other Financing of Renewable Energy – Tax Credit Bonds

Two federal tax credit bond programs exist to finance local government renewable energy and energy efficiency projects. Tax credit bonds allow bond holders to receive payments in the form of federal tax credits. Using the tax credits, local governments may issue these bonds to finance certain qualifying projects at interest rates significantly lower than typical tax-exempt bonds or taxable debt. These bond programs received $4 billion in funding under the federal American Recovery and Reinvestment Act (ARRA) and are described below.

Clean Renewable Energy Bonds may be used only for qualified clean energy projects including: wind, biomass, geo-thermal, solar, landfill gas, trash-to-energy, clean coal and hydropower projects. $1.6 billion was authorized under ARRA, to be allocated one-third to state, local, and tribal governments, one-third to public power providers, and one-third to electric cooperatives.

Qualified Energy Conservation Bonds received $2.4 billion in ARRA funding and may be used for loans and grants for similar projects as well as these other purposes:

- Projects that reduce energy consumption in publicly-owned buildings by at least 20%;
- Implementing green community programs (e.g.; AB 811 financing programs);
- Public education campaigns.

These bonds are a separate ARRA funding source and are not tied to the ARRA Energy Efficiency and Conservation Block Grants or the State Energy Program competitive grants.

Developing a Large Renewable Project on County-owned or Other Property

Due to economies of scale, developing large renewable power projects on large properties is the most cost effective way to produce solar power. The County could develop a large scale solar project on its own property or enter into a joint venture arrangement for a solar project on other public agency property or private property that is suitable.

The County could "own" all or part of the power production from a large scale project depending on the type of joint venture arrangement. Typically, owners of this renewable power would make wholesale power transactions either directly with utilities or with power brokers who would find customers desiring renewable power. The State's desire to increase the percentage of renewable power in utilities' portfolios makes renewable power a desirable commodity.

Another advantage for the County "owning" renewable power comes from the passage of AB 2466. AB 2466 allows local governments to use a local utility's distribution system to "transmit" excess renewable power generated at one site to other sites owned by that local government. For example, the County could generate large scale renewable power at a County-owned park, vacant lot, or (possibly) under a joint venture arrangement on a private lot. Any excess power not consumed at that site could be "transmitted" to other County buildings where the bills would be credited for the renewable energy provided. Presumably this credit would be at retail rates which should provide greater revenues than selling renewable power into the wholesale market.

Assessment of the Options for the County to Begin Purchasing Renewable Power

The table below provides a high level assessment of the costs and other financial considerations for the options discussed above.

ASSESSMENT OF 10% COUNTY ELECTRICITY OFFSET W/ RENEWABLES					
Option	**Upfront Cost**	**Annual Cost**	**Annual Benefit**	**20 Year Financial Evaluation (Net Present Value)**	**Comments on Each Option**
Buy "green credits" from the utilities to offset 10% of total County electricity consumption.	$0	$2.3 million	$0	Minus $28 million	Cost is based on current rates with no escalation. Annual expenditures are equal to spending $28 million today.
Upfront funding and installation of renewable projects on County sites. No utility rate escalation.	$250 million	$0	$12 million (immediate energy cost avoidance)	Minus $100 million	Annual Benefit comes from avoided utility costs. Future escalation of utility rates is not considered here. Cost and benefits equivalent to spending $100 million today.

ASSESSMENT OF 10% COUNTY ELECTRICITY OFFSET W/ RENEWABLES (Cont.)					
Option	**Upfront Cost**	**Annual Cost**	**Annual Benefit**	**20 Year Financial Evaluation (Net Present Value)**	**Comments on Each Option**
Upfront funding and installation of renewable projects on County sites, Considers escalation of utility rates.	$250 million	$0	$12 million (immediate energy cost avoidance)	$0	Net Present Value is zero if it is assumed utility rates approximately double over 20 years.
Third-party finance renewable installations on County sites using Power Purchase Agreements (PPA).	$0	$12 million (includes payment for power and capital)	$12 million (annual benefit depends on PPA terms and future escalation of utility rates)	PPA customers are seeing positive NPV.	PPAs include utility rate escalation and pass through of tax incentives to the customer.
Large scale renewable project (financed)	$0	$12 million or lower due to economy of scale on cost per unit of power produced.	$12 million (annual benefit depends on contract terms and future escalation of utility rates)	Should be positive	Benefits derived from utilization of tax incentives, value of power produced and escalation of utility rates.

There are many variables that will impact the financial evaluation of any project. These figures are provided to indicate general order of magnitude costs and benefits and comparative benefits of each option. A decision to purchase "green credits" or implement other types of renewable projects shall be considered in the context of the County's financial situation and available funding sources.

2. ***Report back to the Board within 90 days on the County's current annual energy usage and costs, along with options for the County to begin purchasing renewable energy.***

The table below provides information on the County's current annual energy usage and costs. Options for purchasing renewable energy are addressed under item #1, above.

TOTAL ANNUAL COUNTY ENERGY USAGE AND COSTS		
COMMODITY	**AMOUNTS**	**COMMENTS**
Electricity	1 billion kWh	Includes ISD Utilities Budget and non-centralized (DPW, Parks and Recreation)
Average Cost of Electricity	$0.12/kWh	Peak period electricity (which solar offsets) is an average of $0.15/kWh
Average Annual Electricity Payments	$120 million	
Natural Gas (buildings)	7.7 million therms	Includes facilities where solar water heating potential should be evaluated.
Average Gas Cost	$0.91/therm	This gas is purchased under the Gas Company tariff and prices are fairly stable. The tariff is currently oversubscribed and closed to large facilities.
Average Annual Gas for Buildings	$7.0 million	
Natural Gas (Power Plants)	40.4 million therms	Opportunities to convert to renewable energy in Power Plants are extremely limited
Average Gas Cost	$0.99/therm	This gas is purchased from the market and is extremely volatile; we have seen much lower prices than $0.99 in the past. The Gas Company's tariff is currently closed to large facilities.
Average Annual Gas for Power Plants	$40.1 million	This has ranged from $20 million to $70 million per year and reflects market volatility.
TOTAL ANNUAL ELECTRICITY, GAS	$167.1 million	

3. ***Provide an analysis of how the use of renewable energy or the purchase of energy credits would work in conjunction with the County's existing Energy and Environmental Policy, specifically including:***

   - ***3.1 - How the costs and benefits of purchasing electricity from renewable energy sources compare to the costs and benefits of investing money in improving the energy efficiency of the County's operations.***

The importance of continuing energy efficiency in existing buildings, whether County owned or otherwise, is emphasized according to the State of California's "loading order" which establishes the priorities for the State's utilities in ensuring energy supply and demand are balanced. The State's "loading order" is:

1. Implement all cost-effective energy efficiency projects.
2. Implement demand reduction programs which can reduce State-wide energy consumption under State ordered reduction periods.
3. Develop new generation resources (this includes the State's requirement that utilities achieve 20% renewable energy in their portfolios by 2010 and 33% by 2020)

This indicates that cost effective energy efficiency measures should always be considered before implementing renewable resources. Ideally, under a County Renewable Energy program, cost effective energy efficiency should be evaluated with renewables projects and both energy efficiency and renewables would be implemented together.

An assessment of the costs, cost effectiveness and impact of combining energy efficiency and renewable energy is indicated below.

Impact of Implementing Energy Efficiency Measures and Renewables on a Building

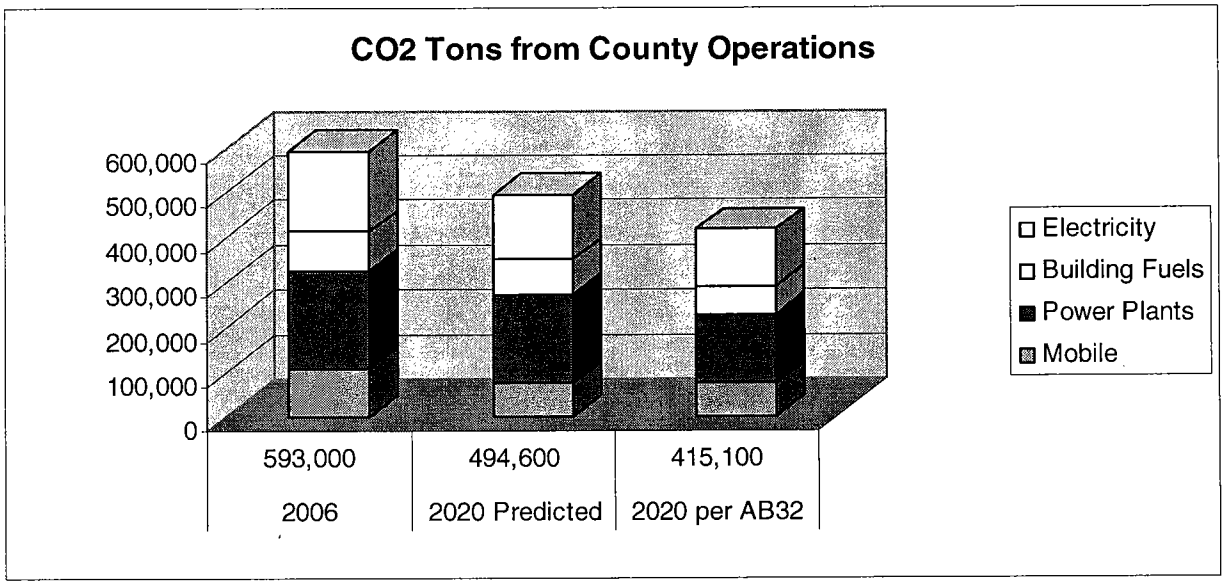
Measure	"Typical" Building Cost	"Typical" Annual Building Savings	Simple Payback	Combined Payback
Lighting Retrofit	$100,000	$30,000	3.3 years	
Facility Retrocommissioning (RCx)	$200,000	$50,000	4 years	
Chiller Retrofit	$200,000	$20,000	10 years	
Solar Installation	$1,000,000	$50,000	20 years	
Lighting + Solar	$1,100,000	$80,000		14 years
Lighting + RCx + Solar	$1,300,000	$130,000		10 years
ALL + SOLAR	$1,500,000	$150,000		10 years

This table illustrates why energy efficiency projects must continue to be undertaken in County facilities with or without renewable measures. This is consistent with the State's policy.

- ***3.2 - How the County's Energy and Environmental Team can effectively evaluate and implement on an ongoing basis the most cost effective and efficacious options for reducing the County's contribution to air pollution and greenhouse gas emissions.***

Evaluation and Implementation of Greenhouse Gas (GHG) Mitigation Options

The chart below illustrates how the County might achieve the same goal for greenhouse gas reduction that the State is mandated to achieve under AB 32; that is, reduce 2006 emissions by approximately 30% by 2020. The County, under this target, must measure current emissions and develop a plan to effectively evaluate and implement the most cost effective and efficacious options for reducing air pollution and greenhouse gas emissions on an ongoing basis in the categories listed below. The chart assumes that, absent any mandate to achieve the same reduction target the State faces under AB 32, overall reductions will occur due to energy efficiency improvements and reductions in transportation fuel consumption due to legislative mandates for fleet conversions.



The chart reflects most of the sources of GHG emissions in County operations. There are a few sources missing: refrigerants from building and vehicle air conditioning equipment, methane, and other GHG containing equipment used in the County, but they are anticipated to be less than 10% of the totals reflected here. The chart is further explained in section 6.4, below.

An effective strategy for reducing greenhouse gases in a cost-effective manner can be developed via the International Council for Local Environmental Initiatives (ICLEI) program "5 Milestones for Sustainability":

1. Conduct a baseline emissions inventory and forecast
2. Adopt an emissions reduction target for the forecast year
3. Develop a Local Climate Action Plan
4. Implement policies and measures
5. Monitor and verify results

To implement this strategy, the following actions are required:

- Identify the sources of greenhouse gases
- Quantify the benefit of programs already underway that mitigate greenhouse gases (voluntary and regulated)
- Evaluate the ongoing benefits of continuing these programs
- Forecast County GHG production under these programs
- Establish County GHG reduction goals
- Identify other areas for mitigating further greenhouse gases (e.g., implementing a renewable energy program)
- Evaluate the costs of additional programs
- Identify funding sources for the additional programs
- Establish criteria for moving forward with additional GHG mitigation programs
- Assess the impacts of changes in County operations (e.g.; additional buildings, employees, altered County operations, energy efficiency programs) on GHG quantification and goal setting.

This entire process is made much more complex due to the last bullet above: assessing the impact of changes in County operations. This will be an extremely difficult task but it is a critical element in evaluating the County's greenhouse gas responsibilities. A 2006 greenhouse gas report has been established; additional years' reports are being developed. From these a regressive analysis back to a 1990 baseline will be attempted since accurate records for 1990 do not exist. Regardless, each year's quantification report will be impacted by the changes in County operations.

The County plans to utilize ARRA funding to develop a comprehensive Countywide Climate Action Plan for both internal operations and community (unincorporated area) greenhouse gas measurement, mitigation planning and program implementation.

- ***3.3 - What the County's Energy and Environmental Team's role is, and what it should be, in ensuring that the Energy and Environmental Policy is consistently implemented by all County Departments; and***

- ***3.4 - What centralized mechanism, if any, exists in the County to track, coordinate, implement, monitor, and prioritize the variety of efforts currently underway to enhance the environmental sustainability of the County's operations, including but not limited to increasing our energy efficiency, combating global warming and air pollution, reducing the generation of solid waste, and improving water quality.***

As these questions are closely related, they are both discussed together below.

Role of the Energy & Environmental Policy Team

The Energy & Environmental Policy Team (Policy Team) was created by the Board to bring together representatives from within the County to help develop the Countywide Energy & Environmental Policy and to evaluate and recommend additional policy programs.

The output of the Policy Team's work to date is documented in semi-annual status reports that have been provided to the Board and in the development of the County's Green Website: http://green.lacounty.gov. This website describes the environmental programs and activities undertaken by the County for both internal operations and on behalf of constituents.

Additionally, the Policy Team has developed the framework for an overall County Climate Change Program (Program). The Policy Team has developed a "by-function" organization chart which describes all of the ongoing programs underway within the County which reduce greenhouse gas production or provide other sustainability benefits both within internal operations and on behalf of constituents. A draft of the County-wide Climate Change Program is attached. In it, current programs are identified and grouped under these major categories:

- Energy/Water Efficiency and Conservation
- Green Buildings
- Internal Environmental Programs
- External (Constituent) Environmental Programs
- Public Education and Outreach
- Legislative and Regulatory
- Climate Change Program Management

Over 23 general programs are described under the major categories. The Climate Change Program was created using two documents: The Institute of Local Government's (ILG's) Climate Action Network Best Practices Framework for Local Governments and ICLEI's 5 Milestones for Sustainability. These documents represent the most comprehensive listing of action items and best practices for local government sustainability programs that the Team has identified to date. Both the ILG Framework and ICLEI's 5 Step Milestone may be found at http://green.lacounty.gov

The ILG is a consultant to the California State Association of Counties and the California League of Cities. They created the Framework to provide a comprehensive listing of sustainable best practices for local governments in a format which allows the local government to "grade" their degree of sustainability and compare themselves against other local governments. ICLEI – Local Governments for Sustainability is a non-profit organization dedicated to helping communities become more sustainable. ICLEI provides membership networking for local governments around the world. ICLEI also provides a number of tools for implementing Climate Change programs.

Implementation of the County Climate Change Program by Departments

The Policy Team has provided policy and program recommendations and has prepared a draft Climate Change Program which provides a plan for moving forward with reducing greenhouse gas emissions in County internal operations and for constituents, how to comply with legislative and regulatory policies and requirements, how to promote County programs, and how to fund and administer all activities. However, the Policy Team is, for the most part, a voluntary committee of department representatives willing to take on the challenge of moving the County forward in establishing and implementing sustainability goals. The Team has no direct authority or responsibility to ensure departmental compliance.

The Climate Change Program indicates that the CEO retains overall administrative responsibility and authority as required by the County's governance structure. The CEO clusters are best equipped to ensure program compliance by departments. Policy oversight and recommendations are provided by the Energy & Environmental Board deputies and the Policy Team.

The major categories containing the various Climate Change programs are led by combinations of CEO Clusters and responsible departments. Programs within the categories are led by responsible departments. The Climate Change Program covers internal and external (constituent-based) activities. It also includes marketing and outreach, again both internal to the County and external. The Climate Change Program also addresses legislative and regulatory activities which impact many departments as regulated mandates are developed at the State and federal level. Lastly, funding issues are also addressed as grants and other opportunities exist to support the activities of the Climate Change Program. The scope of this effort requires that the CEO retain authority to direct the many departments that in are involved in overall County Climate Change Program implementation.

Resources to Coordinate These Efforts

The Policy Team, as noted earlier, is an ad-hoc committee and is not sufficiently resourced to track, coordinate, implement, monitor and prioritize all of the activities contained in the County Climate Change Program. The following recommendations would strengthen the initial coordination of the Program and its activities:

- Individual departments must dedicate or re-prioritize resources to the implementation of the County Climate Change Program;

- Block Grant and other "one-time" funding is available to assist with managing and implementing the Program, but cannot be relied upon to fund permanent County positions;

- The Policy Team will be provided these dedicated (or re-prioritized), departmental resources and a portion of "one-time" funding to dedicate to full-time support and implementation of the County Climate Change Program under the direction of the CEO;

However, to effectively manage this effort over the longer term, additional dedicated resources will be required. The Policy Team and the CEO will explore and propose how the County Climate Change Program support resources should be made permanent as these issues (energy, environmental, sustainability, and climate change) are not considered transitory.

During the Final Changes phase of the Fiscal Year 2009-10 budget process, the CEO will work to identify additional, dedicated resources to manage and implement this effort.

4. In coordination with the CEO's Intergovernmental Relations Unit, incorporate a solar installation program as well as other appropriate renewable-energy and energy-efficiency proposals as part of our Economic Stimulus funding request.

As noted in prior Board status reports, the County developed a listing of energy related projects for consideration in the Federal American Recovery and Reinvestment Act (ARRA). On March 26, 2009, the Department of Energy announced Energy Efficiency and Conservation Block Grant (Block Grant) funding totaling $15.4 million for Los Angeles County. Local governments must submit proposals to secure the block grant funding by June 25, 2009.

The CEO and ISD are currently developing grant applications, which are due by June 25, 2009. This will include a significant component for constituent programs, as described further in Section 6, below, including addressing AB 811 and other solar/renewable initiatives.

5. With appropriate Departmental staff, report back to the Board by January 31, 2009 with an action plan for developing a Comprehensive Renewable Energy Program with the action plan to include recommendations on:

- ***5.1 - Timeframes for meeting key benchmarks (including proposal development, program establishment, and implementation); and***

- ***5.2 - An outreach plan to incorporate community input from residents, developers, and other interested stakeholders.***

We recommend that the County proceed with offsetting 1% of its current electricity consumption with renewable power and that the projects be financed using PPAs. This activity could proceed immediately. Additional timeframes and benchmarks for implementing further renewable projects in County facilities are listed below. Also, timeframes for developing a Comprehensive Renewable Energy Program, including communities and input from communities, is also shown below. Benchmarks for community input are determined from the milestones dates for the Block Grant funding schedule.

Benchmarks and Timeframe for Comprehensive Renewable Energy Program		
Internal Operations Milestone	**Timeframe**	**Comment**
Offset 1% of County consumption	Immediately	Finance using PPAs
Implement cost-effective Solar Water Heating	1-2 years	Identify using Solar Map, finance using PPAs
Investigate and implement additional solar power potential	Through 2015	Identify using Solar Map, augments Policy Goal of 20% reduction by 2015
Investigate and implement (as deemed necessary) large scale solar project	By 2020	As part of matching with the State's AB 32 target (20% reduction of greenhouse gases by 2020)
Community Program Milestone	**Timeframe**	**Comment**
Community Outreach as part of Community Environmental Services (CES) and AB 811 Program development	Currently Ongoing	Will be ongoing as the viability of deploying Community Environmental Services (CES) and an AB811 Program is determined.
CES and AB 811 Program Proposal	June 25, 2009	Deadline to include Program in Block Grant application
CES and AB 811 Program Implementation	March 2011	Deadline to encumber Block Grant funds

The Policy Team is currently communicating with existing, local government energy agencies to evaluate collaboration opportunities on CES and AB 811. As part of the development of the CES program community input forums will be provided. The timeline for these will be driven by the deadlines under the federal Block Grant program:

- Block Grant application due: June 25, 2009
- Block Grant funds received: September 2009 (anticipated)
- Block Grant funds must be encumbered: 18 months after funding
- Block Grant funds must be spent: 36 months after funding

6. Report back to the Board with a comprehensive proposal for a Renewable Energy Program no later than April 1, 2009 with the proposal to include, but not be limited to:

- ***6.1 - A cost analysis, feasibility assessment and recommendations regarding constituent-focused initiatives to be included in the Program. The proposal should include an analysis of community choice aggregation, home energy audits, financing of residential renewable energy products, and other initiatives as deemed appropriate.***

The County has an unincorporated area population of over 1 million and has relationships with all of the 88 incorporated cities within the County boundaries. The enactment of AB 32 and other greenhouse gas mitigation legislation require significant reductions in carbon dioxide and other global warming potential gases. The County can support its constituents and help further regional collaboration in meeting these goals by developing Community Environmental Services Programs for constituents.

Community Environmental Services Program

The Community Environmental Services Program would provide support to constituents in areas such as energy and water efficiency, renewable resources, green building implementation, operations and maintenance, recycling and waste management, vehicle fuel efficiency, and planning and land use.

The potential scope of offerings to be provided by a Community Environmental Services Program could include the following:

- Provide education, outreach on energy and environmental issues
- Provide energy audits, baselines, benchmarks and performance ratings for existing buildings
- Identify energy efficiency and renewable energy measures in existing buildings
- Provide incentives for implementation of measures
- Provide municipal financing or other "green financing"
- Provide green job and skills training
- Support regional efforts on greenhouse gas reporting and reduction programs
- Provide support on existing County programs impacting constituents
    - Support implementation of the County's Green Building ordinance
    - Support on the County's Drought Tolerant Landscaping and Low Impact Development Standard ordinances
    - Enhancing the County's existing recycling and waste diversion programs run by Public Works' Environmental Programs Division

The services will be provided primarily through partnerships with existing organizations that already provide a portion of these services or by partnering with non-profit organizations that work with communities to develop these types of programs. Existing community organizations could be enhanced using County resources including, but not limited to, funds obtained through ARRA, existing departmental expertise in these areas, and through enhancing new County outreach tools like the County's Green Website (http://green.lacounty.gov) and the County Solar Mapping Portal (http://lacounty.solarmap.org).

Local Government Community Environmental Services Program Examples

There are numerous examples of local government programs that offer energy and environmental services to constituents. Several prominent ones are listed below. A handful of progressive local governments have developed internal organizations for providing energy and environmental services for constituents. Others have collaborated to create Joint Powers Authorities where pooled resources are utilized to reach constituents in a region.

- South Bay Environmental Services Center (South Bay Cities COG JPA); http://www.sbesc.com
- City of Santa Monica Office of Sustainability and the Environment (City Division); http://smgov.net/epd
- Ventura County Regional Energy Authority (Ventura County Public Agencies JPA); http://www.vcenergy.org
- Center for Sustainable Energy (San Diego County public/private joint venture); http://www.sdreo.org
- San Francisco Department of the Environment (City/County Department); http://sfenvironment.org
- Sonoma County Energy Independence Program (County/Cities JPA Program); http://www.sonomacountyenergy.org

Possible Funding Sources for Community Programs

A variety of programs could provide funding for this type of effort.

As mentioned earlier, ARRA includes formula Block Grants for local governments. Under this program the County has been allocated $15.4 million. Under the Block Grant descriptions, funds may be used for community programs that provide outreach, technical support and programs for implementing energy efficient measures. A Block Grant proposal and strategic plan is due to the Department of Energy (DOE) by June 25, 2009. In addition, ARRA provides for State Energy Program Competitive Grants; initial discussions indicate that State Grants might be used to leverage block grants used on "Green Community" programs.

Since 2002, the County has received funding from the State's Investor Owned Utility (IOU) Energy Efficiency program. Under this program, the County is currently a Local Government Partner with Southern California Edison (SCE) and the Gas Co. This funding has been used exclusively for improvements in County buildings; however, funding may be used on community programs. The program is currently being developed for a 2009-11 cycle. ISD is in discussions with SCE and the Gas Co. regarding support for the Community Environmental Services Program. Approval by the California Public Utilities Commission (CPUC) for all program proposals is anticipated around August of this year. The IOU Energy Efficiency programs place great emphasis on achieving energy savings, so community program funding should emphasize incentives for implementing energy efficiency measures or providing energy efficiency outreach and education.

Under AB 811, which was signed into law in 2008, local governments may finance energy efficient and renewable resource improvements to private buildings. The financing is provided by the local government and is secured by a lien against the property. The lien is paid off through an assessment on property tax bills. A separate committee under the Policy Team is investigating the feasibility of implementing an AB 811 program for the County. Under AB 811 local governments are allowed to collect program start-up and administrative costs in the financing charges. It appears that Block Grants may be used on AB 811 programs to fund start-up and operational costs and to provide project incentives.

Under a regulated, greenhouse gas reduction program, emissions allowances (permits to produce greenhouse gases), offsets (verifiable market reductions) and credits (reductions that occur outside the market) may be bought and sold among market participants. This is called a "Cap & Trade" program. California has not yet implemented Cap & Trade under AB 32. However, a western North America or national Cap & Trade regime may be implemented before California's. Both are under development. The County and others are advocating (at the State, regional and national level) that energy efficiency and renewable energy programs, especially those developed and administered by local governments, should be provided with financial recognition for the GHG reductions they produce. Cap & Trade revenues could also support community programs.

Other support for Community Environmental Services Programs could come from involved departments. ISD's Energy Management Division could provide technical support on energy matters. Regional Planning and Parks and Recreation could also provide technical and outreach support. DPW's Environmental Programs Division (DPW/EPD) already provides community services for recycling, waste diversion and waste reduction. A Community Environmental Services Program could leverage DPW/EPD's outreach resources.

A variety of other federal and State energy and environmental grant opportunities exist which can support a County Community Environmental Services Program. These will be researched as well.

Program Management and Implementation Options

Various options are being investigated to determine how this Program would be managed. As mentioned earlier, organizations exist that have experience in developing these types of projects and could provide staff and contracted resources. Another option would be to utilize the Community Development Commission (CDC) to provide management oversight and field support. The CDC has experience in providing community services and an established presence in the County's communities.

Field offices may be developed by integrating with existing community offices (e.g.; the South Bay Environmental Services Center or other regional Council of Government organizations) or implemented in conjunction with The Energy Coalition (TEC). TEC is a non-profit organization that specializes in developing and administering these types of programs in targeted communities and works with local governments to establish these offices. Additionally, these offices could be co-located in existing County field offices (e.g., Public Works, Regional Planning).

The County's environmental websites will also be a cost-effective way to provide information to the community.

Cost Estimates

The local community energy and environmental services program examples cited above provide good examples of the order of magnitude budget for these offices. We have obtained the budgets for South Bay Cities Environmental Services Center, Ventura County Regional Energy Alliance and other local government energy efficiency partnerships. These budgets cover all operating costs (staff, rent, materials, marketing, and incentives for implementing projects). Increases in budgets to cover the full range of services listed earlier (including developing an AB 811 program) have been considered as well. The estimate below is based on this information.

It is proposed that the Federal Energy Block Grants be used to initially fund this effort and that as much as $10 million of the County's total ($15.4 million) be used to provide these services to targeted unincorporated areas (and to possibly include partnering with adjacent cities to cover all constituents).

Using Block grant funding requires that the funds be encumbered within 18 months after receiving them; we currently estimate Block Grant funds could be received around September of 2009. The Block Grant funds must be spent three years after they are received. To make the programs sustainable in the long term, funding from the other sources described above will also be obtained. The primary source of funds in the future will likely come from an AB 811 program that allows for operating costs to be recovered and in expanding the County's partnership with SCE and the Gas Co. to include community programs.

Community Choice Aggregation

Community Choice Aggregation (CCA) allows local governments to purchase or provide power on behalf of its constituents. This would take the place of power provided to constituent ratepayers by the local utility. The local utility would still deliver the power through its lines and wires and provide services such as customer service, billing and collections, trouble shooting,

etc. CCA was created under AB 117 and signed into law in 2004. The CPUC has adopted regulations governing how local governments would operate a CCA program in conjunction with investor owned utilities. The benefits of CCA include:

- Possible, long-term savings on the power portion of utility bills;
- Local governments can determine the amount of renewable power received in their community;
- Local governments can establish their own power rates for residential, commercial and industrial customers (ratemaking is often used to incentivize economic development or other programs);
- Local governments can use energy efficiency surcharges (that all ratepayers currently pay to the utilities to fund their general efficiency programs) to create community-based energy efficiency or renewable programs

The drawbacks of CCA include:

- Developing or purchasing power has risks and it is possible that CCA rates will be higher than the utilities;
- Creating a CCA is complicated and there are up front costs involved with implementing a CCA program;

In 2004, ISD commissioned a CCA feasibility study for County unincorporated areas. The results of that study concluded that CCA was not yet cost-effective. However, the report did not address the desirability of communities to use more renewable power in spite of higher prices. The report also did not address the legislative and regulatory mandates of AB 32. That study will be updated using current forecasts for market energy and renewable power. CCA will be included as a program to be evaluated under the Community Environmental Services Program. However, ISD can maintain budget responsibility for continued investigation of CCA for the County. CCA has been investigated in San Francisco City/County; the Cities of San Marcos, Chula Vista, Palm Desert; and the local communities that receive power from the Kings River Conservation District (including Tulare County). Each potential program has taken several years to progress to a point where the program could be brought to their respective governing boards for approval. Only the Kings River Conservation District CCA program is moving forward towards implementation. CCA will be a long-term project.

- ***6.2 - Policy recommendations for renewable projects on County property, including protocols for public-private partnerships, new construction, leased facilities, and existing buildings.***

The Policy Team has developed a Renewable Energy committee to investigate, develop and propose policy recommendations. This group has met several times and has addressed the following options for utilization of all renewable power in the County:

- Determine if the County should support privately developed, large-scale renewable projects located in the County. For example, the County reviews siting plans and is the permitting authority on construction. Thus, the County could expedite these processes to support the State's goal of developing more renewable power sources.

- Streamline the site permitting process and make clear to developers who in the County will coordinate the development of large-scale renewable projects.

- Investigate the viability of a large-scale renewable project on County-owned property.

- Investigate Public-Private partnerships between the County and private developers on large-scale renewable energy projects so that the County may own renewable power for its own uses.

- Develop a policy for integrating renewable power into new County construction projects and existing buildings utilizing the Solar Map to prioritize sites.

- Develop a renewable program for constituents under AB 811 and integrate it into the County Solar Mapping Project and the County Green Website.

Additional issues that have been considered in developing recommendations for a County Renewable Policy include:

- The cost-effectiveness of renewable energy in County facilities was weighed against the cost-effectiveness and ongoing need for energy efficiency improvements.

- Current and forecasted costs of renewable power (whether developed or purchased) must be assumed in any economic evaluation.

- Forecasted costs of electricity provided by the State's utilities must be included in any economic evaluation.

- Policy and regulatory issues regarding the State's intent to increase the viability and use of renewable energy must be considered and monitored.

- Selected, viable projects should utilize Power Purchase Agreements (PPAs) which allow private developers to build and own the projects, utilize tax incentives, and pass them along through monthly payments the County would make for power output from the projects.

- Project financing on a larger scale should consider using other financing such as Qualifying Energy Conservation Bonds or Clean Renewable Energy Bonds which provide tax credits for buyers of the bonds. These bonds were supplemented under ARRA and are available for use on local government owned renewable energy projects.

- Purchased renewable power from the utilities is available to support LEED certification or other County policy goals (this purchased renewable power comes at about a 20% premium over typical utility power). As noted previously, LEED points can be acquired for offsetting 25 and 50% of projected energy use for two years; thus the overall utility bill would increase 5-10% for the site for two years.

- New legislation and regulations that will impact the economic viability of renewable power should be considered; e.g.,

    - SCE and the Los Angeles Department of Water and Power (LADWP) have developed new renewable power tariffs for customers,

    - The CPUC is investigating higher payments for customers that sell renewable power back to the utilities,

- The CPUC is developing a new tariff (under AB 2466) which allows local governments to generate renewable power in one location and receive credit for additional power generated against other accounts.

- Cap & Trade emissions markets are under development (for California, western North America, and nationally) and will determine the ownership and value of "renewable credits" and "carbon credits" developed from renewable projects;

- The County's existing Energy and Environmental Policy goals; e.g., Cool Counties goal, achieving LEED certification for new (and possibly existing buildings), and energy efficiency consumption reduction targets, should be considered.

The following recommendations are being discussed for inclusion in a County Renewable Energy Policy, which will be presented to the Board for approval during FY 09-10.

- Investigate developing and financing a large-scale renewable project(s), independently or through a partnership with private and public entities, on County property or other property with the goal of owning a portion of the power output.

- Large scale renewable projects, or groups of small to medium facility specific projects, financed using federal tax-credit bonds: Clean Renewable Energy Bonds or Qualifying Energy Conservation Bonds.

- Develop and finance building-sized, renewable projects on existing County facilities;

    - The Solar Mapping Portal should be used to identify the best candidates for rooftop and open space renewable applications.

    - Where significant water heating is required, solar thermal water heating should be investigated in addition to solar power production.

    - Those sites should be audited to ensure all viable and cost-effective energy efficiency measures are implemented either before or in conjunction with renewable projects.

    - Highly attractive renewable energy projects on existing County facilities should be implemented immediately using PPAs so that the County may receive the benefit of significant tax incentives available for renewable installation owners and the project costs paid over time with the avoided electricity costs.

- For new construction, the develop and finance renewable projects;

    - An assessment of solar water heating and solar power production should be incorporated into the conceptual design (i.e., consider available roof and open space, peak power usage, water heating needs, viability of LEED credits for renewable power);

    - Consider financing the renewable energy project under a PPA or other vehicle that allows tax incentives to flow back to the County;

    - Where a renewable energy project is not deemed appropriate, consider purchasing renewable power from the utility supplier to obtain LEED renewable credits.

- Develop standards for County leased buildings related to energy issues. Standards for payment of utilities, implementation of energy efficiency, use of sustainable building operations and maintenance, and use of renewable energy will be re-evaluated when leases are renewed.

- ***6.3 - Identification and recommendations of existing best practices and opportunities to partner with other local jurisdictions.***

Currently, the best practices for renewable power for local governments would include:

- Implement all cost-effective energy efficiency in a County facility before developing a renewable power installation (or combine the renewable installation project with needed energy efficiency projects).

- Investigate solar water heating at appropriate sites (e.g.; Parks facilities with pools, jail and hospital laundry facilities) before solar power production; it is more cost-effective because the equipment is less expensive to manufacture.

- Larger renewable energy projects are more cost effective than multiple smaller ones and rules exist to permit excess, site power "credited" to other County accounts.

- If multiple, viable renewable energy projects are pursued, they should be "aggregated" under a single solicitation to achieve economies of scale with the developer/contractor.

- Partner with other like-minded local governments where possible, either on a large-scale project or on multiple projects.

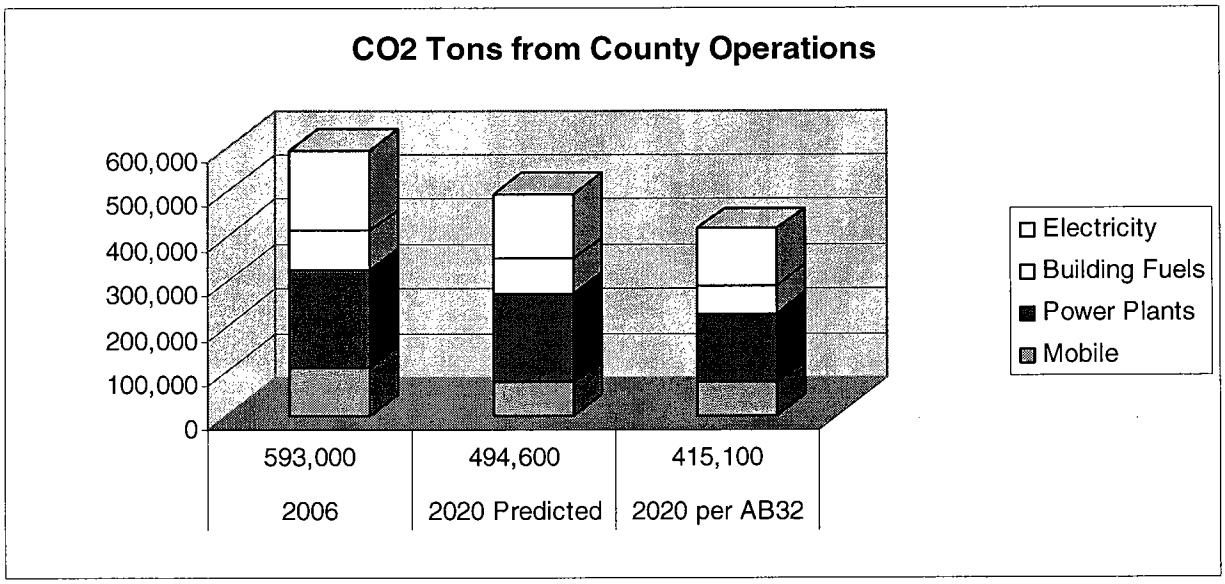
- The Community Environmental Services program should be made available to cities that wish to participate especially when an AB 811 municipal financing program is created.

- ***6.4 - Benchmarks for the Board to consider adopting regarding conversion to a renewable energy portfolio to meet our electrical needs.***

<u>Using Renewable Energy to Support the State's AB 32 Goal and the Cool Counties Goal</u>

AB 32 requires the State to reduce its GHG production to 1990 levels by 2020. Although not yet required to do the same, the County should consider that as a goal for internal operations. Adoption of such a goal would also support the objectives of the Cool Counties charter which the County adopted. The State has determined that achieving this goal would require an approximate 30% reduction in 2006 greenhouse gases by 2020.

Below is a chart indicating the respective contributions to the County's "carbon footprint" in 2006, a very preliminary assessment of emissions in 2020, and the 2020 County target (30%) reduction if a goal consistent with AB 32 were adopted.



2006 Emissions

The 2006 column indicates CO2 from internal County operations as compiled by ISD and reported to the California Climate Action Registry. "Electricity" is that purchased from utilities or used from the County's power plants. "Building Fuels" are combustion emissions produced from boilers and emergency generators in County buildings. "Power Plants" emissions are from natural gas used in the County's cogeneration plants. "Mobile" are emissions from fleet and mobile equipment.

2020 Predicted Emissions

The 2020 Predicted column provides an assessment of where the County's internal emissions may be under status quo conditions, assuming electricity use will be reduced per the Policy goal of 20% reduction by 2015.

It is assumed building fuel consumption sources will reduce emissions by 10%. The efforts and cost to reduce the output, or emissions, of existing boilers and emergency generators by 30% still needs to be more thoroughly evaluated. For now it is assumed 10% reduction can be achieved by 2020.

It is assumed Power Plant emissions will reduce to 90% levels through efficiencies. Plant output could theoretically be reduced 30% but it would have a corresponding impact of increasing electricity consumption in other County facilities because the plants provide power (directly and indirectly) to County buildings.

It is assumed mobile combustion could achieve a 30% reduction if legislated targets are achieved. The State requires government fleets to achieve 100% compliance with Best Available Control Technology by 2011. We assume here that the targets will be achieved by 2020 in this case and that those achievements will result in 30% reduction in emissions through fuel economy. This needs to be evaluated more thoroughly but, based on input from other counties that have conducted similar analyses, this is a reasonable assumption.

2020 per AB 32

Based on these general evaluations, the County would still require about 80,000 tons of CO2 reduction to achieve the AB 32 and Cool Counties target. In California, one ton of CO2 is offset with about 2,900 kWh of energy efficiency implementation or renewable power production. The 80,000 ton shortfall would require 230 million kWh of clean power production (or additional energy efficiency results) each year. Looking only at renewable power as possible resource to fill that gap, converting 23% of the County's current electricity consumption to solar power would ensure achievement of the AB32 goal under these assumptions. The discussion below illustrates how that might be accomplished.

Available Solar in the County Using the Solar Mapping Portal

The Countywide Solar Map, developed by the CIO with assistance from ISD, is now on-line (http://solarmap.lacounty.gov). It provides initial estimates of solar power potential (using conventional solar photovoltaic panels which are commercially available) of every rooftop in the entire County. As part of the project, more detailed solar potential analyses were conducted for 800 County-owned buildings.

The Solar Map reports that there is a total of about 200 MegaWatts (MW) of solar power potential on all County-owned building rooftops. 200 MW represents approximately 100% of the County's peak power needs. Additionally, the Solar Map calculates solar potential on County-owned property exclusive of rooftops; this represents ground-mounted solar power potential. Per this analysis there is a total of about 6,000 MW of solar power potential on all County grounds. Given sufficient resources, it appears that the County has the potential to utilize solar power to provide a significant contribution to achieving an AB 32 reduction goal.

Below is a table showing the impact of offsetting County electricity consumption with solar power.

% of County Electricity Offset by Solar Installations	kWh produced by Solar (Using Solar Map Benchmarks)	Cost (Using Solar Map Benchmarks)	Percent Contribution to Achieving County AB 32 Target by 2020	Percent of County's Total CO2 Responsibility
0.10	1,000,000	$2,500,000	0.44	0.06
1	10,000,000	$25,000,000	4.38	0.59
10	100,000,000	$250,000,000	43.75	5.90
20	200,000,000	$500,000,000	87.50	11.80
23	229,000,000	$572,500,000	100	13.52
30	300,000,000	$750,000,000	131	17.71
50	500,000,000	$1,250,000,000	219	29.51

An additional product of the Solar Map program effort is the development of a spreadsheet illustrating each County building rooftop and every County-owned property (identified by parcel number) with corresponding solar power potential. The list can be sorted in a variety of ways: greatest solar potential, by Department proprietor, etc. This will be an extremely valuable tool for the County in assessing, prioritizing and evaluating future solar projects. The benefits, or savings, of using solar power resources are discussed elsewhere in this report.

Financing Renewables – Achieving "Grid Parity"

Another benchmark for the County to adopt in implementing renewables would be to replace the cost of utilities (gas or electricity) with renewable resources where the payment for them are equal under a set of economic evaluations; this is called "grid parity." Grid parity means that if a renewable resource project were to be financed, the initial years' price for the energy commodity (gas or electricity) would be at a minimum equal to the current price of electricity or natural gas. This could be achieved through a Power Purchase Agreement (PPA).

PPAs for renewables projects can leverage significant tax incentives for private developers. It is conceivable that the monthly utility payment under a PPA could initially be less than what a facility is currently paying to its utility. This represents a reasonable target for renewable installations in County facilities. Other factors will impact the overall PPA economic analysis, including: escalation of monthly payments, escalation of utility rates, efficiency of the renewable project over time, performance of the renewable project over time, availability of new technologies. Unless the impetus for directly installing solar goes away, the County should select a site for installation of a renewable project and approve a project under a PPA so that experience may be gained. There are many resources for forecasting rates and energy prices; the California Energy Commission, the National Energy Information Administration, and a variety of wholesale power market indices can provide these forecasts.

Financing Renewables - Energy Economics Variables

When evaluating the economics of renewable energy projects, financing options become critical due to the significant tax incentives that are available to private developers. Unlimited tax credits and accelerated depreciation allow developers to offset as much as 70% of renewables projects overall costs through these tax incentives.

Additionally the Federal Stimulus Package has provided funding for bonds which have traditionally used by local governments to fund clean power projects and energy efficiency projects. These bonds are Clean Renewable Energy Bonds and Qualified Energy Efficiency Project Bonds. They provide significant tax incentives for the bond purchasers and can be used to finance County renewable and energy efficiency projects.

Whether financed or paid with up front cash, the overall economic viability of renewables projects must be evaluated based on a forecast of utility rates. Simply put, the economic evaluation of these projects will be conducted as follows:

- Net Present Value of Project is a function of: [Cash Upfront], [Annual Payments], [Annual Benefits], [Period of Evaluation], [time value of money]
- Cash Up front = Zero if the project is financed
- Annual Payments = project finance payment
- Annual Benefits = the savings from utility rates each year

As utility rates vary, a forecast of rates over the Period of Evaluation must always be conducted in the economic analysis.

- ***6.5 - Strategy for soliciting Federal Energy Block Grants funds to support a comprehensive Renewable Energy Program.***

Federal Energy Block Grants have been funded under ARRA. Each State's allocation has been determined and each large city and county within California has been assigned a target Block Grant amount. The County's share of the Block Grants is $15.4 million.

A summary of the eligible projects for which the Block Grants is available from many sources. The Block grants may be used for Renewable Energy Projects on local government sites. However, because the Block Grants are a one-time funding source and because the County's potential for renewable power is so great, it is recommended that Block Grants not be used for County renewable projects. Renewable energy projects in the County should be financed using PPAs, Clean Renewable Energy Bonds or other available "green" financing vehicles. Because renewable projects provide a direct and quantifiable savings from utility bills, project financing is readily available and easily acquired.

The County should use the ARRA Block Grants to fund the development of a County Climate Action Plan to develop and implement an AB 811 program that includes financing of renewable projects on private development, and to provide outreach and education to the community. At this point, it appears that these are eligible activities under Block Grant rules. In addition AB 811 allows ongoing program management costs to be included in the financing charge so the program contains a potential, ongoing funding source.

In addition to Block Grants, competitive grants will be available from the State for energy efficiency and renewable projects. Preliminary indications from the California Energy Commission are that there is a strong desire to "leverage" competitive grant funds with Block Grant funding, especially where a local government has committed to using Block Grants as an instrumental part of developing and implementing an AB 811 program. This is another reason to prioritize Block Grants on AB 811 programs.

- ***6.6 - Additional recommendations for inclusion in our State and Federal legislative agenda.***

ISD, as the county's energy manager, is working with the CEO on the following proposals for possible inclusion in the County's State and Federal legislative agenda:

- Support continued enhancement of renewable energy tax credits to provide stability to the renewable industry and marketplace.

- Support legislation that provides renewable incentives for local governments in lieu of tax credits.

- Propose and/or support legislation that recognizes or rewards greenhouse gas reductions from local government administered energy efficiency and renewables programs whether under a Cap & Trade scheme or outside Cap & Trade.

- Support the expansion and upgrade of the transmission infrastructure that facilitates greater renewable power generation and delivery.

- Propose and/or support appropriate standards for the interconnection of distributed renewable energy generation; the creation of uniform, consistent standards for distributed net metering, and the requirement for utilities to credit renewable energy producers for all electricity delivered to the grid (at optimized retail rates).

- Support simplifying and standardizing the available incentives for renewable energy production (solar rebates or prices paid for grid delivered energy – "feed in" tariffs) for all sizes of generation capacity.

7. Identify and coordinate all approved motions relative to improving the health of the environment and the related well being of County residents.

The County green website, (http://green.lacounty.gov) contains the most comprehensive listing and description of all recent environmental programs initiated or requested by your Board. Under the proposed County Climate Change Program, all current and additional motions and programs developed by the County will be identified, implemented and coordinated.

DRAFT - FOR DISCUSSION PURPOSES ONLY

5/5/2009

Attachment IV

Overall Program

COUNTYWIDE CLIMATE CHANGE PROGRAM

Program Administration: CEO

Support: County Counsel, CEO Community & Municipal Services (CMS), CEO Internal Operations, CEO IGR, County Counsel

Energy & Environmental Board Deputies

Energy & Environmental Policy Team

Individual Programs

Coordinator

Teams

Lead

Support

Typical Projects

STATUS*

Underway

Starting

Should Start

*preliminary self-evaluation

Energy/Water Efficiency and Conservation - Internal Operations

Coordinator: CEO Internal Ops

Energy Efficiency - Existing Buildings

Lead: ISD, CEO
Support: E&E Policy Team, Dept. Maintenance orgs
Policy target - 15% consumption reduction by 2015

Performance Monitoring

Benchmark County Buildings Performance

Water Conservation

Lead: DPW, CEO
Support: E&E Policy Team, Dept. Maintenance orgs
10% reduction 2008 & 2009

Performance Monitoring

Implement recycled water program

Employee Conservation Programs

Lead: ISD, DPW
Support: E&E Policy Team

Employee Energy & Environmental Fairs

Employee Hybrid Purchase Program

County-wide Conservation Program

Employee Pre-Tax Transit Purchase

Performance Monitoring

Green Buildings

Coordinator: CEO CMS

Capital Projects Program

Lead: CEO, DPW
Support:

LEED NC Silver Board Policy, Other Sustainable Design Policies

Sustainability program for non-LEED projects
Transition LEED NC to LEED EB

Track Results

Existing County Buildings Best Practices

Lead: ISD
Support: E&E Policy Team, Dept. Maintenance orgs
Develop best practices M&O manual for existing County buildings

Investigate, implement LEED EB Pilot programs
Existing Buildings Performance Benchmarking

County Department Sustainability Programs

Lead: CEO
Support: E&E Policy Team, Depts.

Investigate, implement departmental sustainability programs

Assist departments with programs

Internal Environmental Programs

Coordinator: CEO Internal Ops

Climate-Friendly Purchasing

Lead: ISD, CEO
Support: Large Depts.

Environmentally Preferable Purchasing Policy

EPEAT

Green contracting

Styrofoam, Plastic Bag Ban - County facilities
Performance Monitoring

Waste Reduction and Recycling

Lead: DPW/EPD, CEO
Support: E&E Policy Team, Dept. Maintenance orgs
Existing Buildings Recycling Enhancement

Source Reduction Programs

Integrate into Construction, Demolition and Other Processes
Performance monitoring

Green Fleet

Lead: CEO, DPW, ISD
Support: Fleet Managers

Develop centralized County strategy

Monitor regulatory compliance

Infrastructure Support - Charging Stations, Parking Spaces, etc.
Implement centralized programs

Renewable Energy

Lead: CEO, ISD
Support: Renewables Policy Team

Develop Policy for Regional Development of Large Scale Renewables

Investigate County Large Scale Development Opportunities
Constituent Programs - AB811
Renewables in County Facilities - New and Existing

External Environmental Programs

Coordinator: CEO CMS

Land Use and Community Design

Lead: Planning, CEO
Support: DPW, Parks

Community and Neighborhood Plan

New Development and Transit Systems

Compact and Efficient Development

General Plan Includes GHG Considerations
Increase Transportation Choices
Open Space Planning, Natural Resource Preservation

Countywide Green Buildings and Green Development

Lead: Planning, CEO
Support: Green Building Ordinance Team
Green Building Ordinance

LIDS Ordinance

Drought Tolerant Ordinance

Implementation and enforcement

Community Energy Programs

Lead: CEO, ISD
Support: Planning, DPW, Parks

Investigate, implement Community energy and environmental programs

Investigate, integrate County financing (AB811) into community program

Investigate Community Choice Aggregation
Implement Countywide Solar Mapping Portal

DPW Environmental Programs Division (EPD)

Lead: DPW EPD
Support:

Integrate Programs Managed by DPW's EPD into Countywide Energy & Environmental Programs and Goals

Public Education & Outreach

Coordinator: CEO CMS

Community Outreach

Lead: CEO
Support: Outreach Depts.

Programs for underserved, hard to reach - DPSS, DCFS, DCSS, Library

Programs for Low Income, Public Housing

Programs through Office of Small Business
Public Health Program

County Green Awards

Public Agency & Community Collaborations

Lead: CEO
Support: ISD, Planning, DPW, Parks

L.A. Regional Sustainability Collaborative

Programs with Existing Collaborations - COGs, Contract Cities, SCAG etc
Local Government Sustainable Energy Coalition
Special Events - NACO Challenge, National Climate Conversation
County Green Leadership Awards

Marketing and Communications

Lead: CEO, ISD
Support: E&E Policy Team

Public Announcements, Reports to Constituents, Public, Others

Website Messages

Website Management: green.lacounty.gov, Solar Map

Legislative & Regulatory

Coordinator: CEO Internal Ops

Energy/Environmental Regulatory Compliance

Lead: CEO
Support: E&E Policy Team

Identify New Requirements and Compliance: GHGs, Refrigerants, Fleet Compliance, Fuels
Develop Countywide Tracking and Compliance Reporting

Energy/Environmental Legislation Monitoring

Lead: CEO/IGR
Support: E&E Policy Team

Monitor and Track New Proceedings: AB 32, SB375, SB97

Assess Impacts, Coordinate Positions and Intervention
Special Cases: Vernon Power Plant, SCAQMD Lawsuit
Develop and implement Climate Change legislation

State and Federal Climate Change Funding

Lead: CEO, ISD
Support: DPW, Planning

Apply for Federal Stimulus Package Grants

Lobby for Federal and State Climate Change government programs, grants

Investigate and develop all sustainable funding sources

Countywide Climate Change Policy Management

Coordinator: CEO Internal Ops/CMS

Program Goals, Performance Tracking

Lead: E&E Policy Team
Support:

Develop goals, schedule, milestones, performance criteria

Internal Operations GHG Quantification and Reduction Plan
Support Community GHG Quantification and Reduction Plan
Results Monitoring and Verification

Performance Reporting
Coordinate Emissions Market Participation

Program Management

Lead: E&E Policy Team
Support:

Coordinate compliance with other policies: (Strategic Plan, Board Motions (Cool Counties))
Provide regular reporting and updates to Board
Track Programs and Teams Performance

Track due dates, milestones, deadlines

Manage consultants, technical resources, memberships (ICLEI, Climate Registry)

Budget and Resource Administration

Lead: E&E Policy Team
Support:

Develop, propose and administer budget (as necessary)

Develop, propose and administer resource and funding sources

Acquire and manage outside funding sources